DETAILED ACTION

Abstract.

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

2. The abstract of the disclosure is objected to because it is more than a single paragraph and it uses the legal phraseology "said". Correction is required. See MPEP § 608.01(b).

Specification

3. The disclosure is objected to because of the following informalities: Page 2, lines 1-3, "resistance to enable ON, and energy saving, said roller having a structure consisting of a base made of a silicon rubber to which a filler is added, and a surface layer made of fluorocarbon resin."

The words "and energy saving" as used in the sentence is not clear, because it is not clear how it relates to the structure disclosed.

Page 12, lines 18-24,"Fig. 1 shows an embodiment of the heat radiating apparatus of the IC package. Said heat radiating apparatus (1) consists of a printed circuit base panel (2), a Central processing unit (CPU) (3) set on said printed circuit base panel (2), a heat radiative film (4) formed on said CPU (3), and a heat radiative panel (5) put over said heat radiative film (4), and said CPU (3) and said heat radiative film (4) were fixed between said base panel (2) and said heat radiative panel (5) by bolts (6) and nuts (7)."

The abbreviation "IC" was used without clarifying what IC stands for, no reference was made of the meaning of IC in the instant specification.

Appropriate corrections are required

Claim Objections

4. Claims 8, 9 and 10 are objected to under 37 CFR 1.75(c) as being in improper forms because they depend on canceled claims 2 and 3. See MPEP § 608.01(n). For the purpose of this office action, claims 8-10 are treated as dependents of claim 1.

Appropriate correction is required

5. Claims 6 and 8 are objected to because of the following informalities:

The recitation "metal of said metal alkoxide" should be amended to "metal of said metal or semimetal alkoxide" because the Markush group following said limitation includes metals and semimetals.

In line 3 of both claims, a comma is missing between boron and aluminum.

Appropriate corrections are required.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1 and 5-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "highly" in claim 1 is a relative term which renders the claim indefinite. The term "highly" is not defined by the claim; the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Regarding claims 7, 9 and 10, the phrase "and/or" renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Double Patenting

8. Claim 8 is objected to under 37 CFR 1.75 as being a substantial duplicate of claim 6. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Appropriate correction is required

9. Claims 9 and 10 are objected to under 37 CFR 1.75 as being a substantial duplicate of claim 7. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Appropriate correction is required

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

12. Claims 1 and 5-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chikuni et al (US 5,755,867).

Regarding claims 1,7,9 and 10 Chikuni et al discloses a material being made from an organic-inorganic hybrid material (a silicone coating, see column 2, lines 19-39), prepared by heating a sol (column 11, lines 49-52) containing a metal alkoxide (see curing catalysts: column 9, lines 35-36), and an organopolysiloxane (column 5, lines 28-43) having a high molecular weight (column 6, lines 41-49), plus a highly thermally conductive filler (see titanium dioxide :column 9, line 60 - column 10 line 22), wherein

said highly thermally conductive filler is a fine powder of one or more kind(s) of metal and/or metal oxide and/or metal nitride and/or metal carbide (column 10, lines 15-16).

Though Chikuni et al did not state explicitly that the titanium dioxide acts as "a highly thermally conductive filler" nor that the composition formed is heat resistant or thermally conductive, products of identical chemical composition cannot have mutually exclusive properties.

Therefore, regarding limitations recited in said claims which are directed to specific properties of material recited in said claims, it has been held that once a material is disclosed as being made from a high molecular weight organopolysiloxane, a metal alkoxide, and highly thermally conductive filler as set forth above, it will inherently display recited properties. See MPEP 2112.

Chikuni et al further discloses that the advantage of using high molecular weight organopolysiloxanes is obtaining coatings having transparency, luster and smoothness (column 6, lines 44-46). While the reference does not explicitly disclose the average molecular weight of the organopolysiloxane being higher than 15000, the average molecular weight of the organopolysiloxane is not considered to confer patentability to the claims. As the coating transparency, smoothness & luster are variables that can be modified, among others, by adjusting said average molecular weight; with said transparency, luster and smoothness increasing as the molecular weight is increased (see Column 6, lines 41-46). The precise average molecular weight would have been considered a result effective variable by one having ordinary skill in the art at the time

the invention was made, as such, without showing unexpected results, the claimed average molecular weight cannot be considered critical. Accordingly, one of ordinary skill in the art at the time the invention was made would have optimized, by routine experimentation, the average molecular weight of the organopolysiloxane in the composition of the reference to obtain the desired transparency, luster and smoothness (In re Boesch, 617 F.2d. 272, 205 USPQ 215 (CCPA 1980)), since it has been held that where the general conditions of the claim are disclosed in the prior art, discovering the optimum or workable ranges involves routine skill in the art. (In re Aller, 105 USPQ223).

Regarding the method by which the organic – inorganic hybrid material is synthesized, as recited in claim 5, it is noted that while a product-by-process claim is defined by the process steps by which the product is made, determination of patentability is based on the product itself. In re Thorpe, 777 F.2d 695, 227 USPQ 964 (Fed. Cir. 1985). as the court stated in Thorpe, 777 F.2d at 697, 227 USPQ at 966 (The patentability of a product does not depend on its method of production. In re Pilkington, 411 F.2d 1345, 1348, 162 USPQ 145, 147 (CCPA 1969). If the product in a product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process).

. Regarding claims 6 and 8, Chikuni et al discloses all the claim limitations as set forth above, wherein the metal of said metal alkoxide is of one or more kind(s) of metal(s) selected from a group consisting of boron aluminum, silicon, titanium,

vanadium, manganese, iron, cobalt, zinc, germanium, yttrium, zirconium, niobium, lanthanum, cerium, cadmium, tantalum and tungsten (column 9, lines 35-36).

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Okami et al (US 6,074, 963) teaches the manufacturing of a thermally conductive composite material.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Olatunde S. Ojurongbe whose telephone number is (571) 270-3876. The examiner can normally be reached on Monday-Thursday, 7.15am-4.45pm, EST time, Alt Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Basia Ridley can be reached on (571) 272 1453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/O.S.O/
Examiner, Art Unit 4145

/Basia Ridley/
Supervisory Patent Examiner, Art Unit 4145